

## The assessment for the potential introduction, spread and maintenance of African Swine Fever in the European Union from the Trans Caucasus Countries or the Russian Federation

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### Introduction

The African swine fever virus (ASFV) isolate circulating in the Trans Caucasian Countries (TCC) and the Russian Federation (RF) is a highly virulent virus that has maintained its virulence since the first outbreak in Georgia in 2007 (1). ASFV can be transmitted by direct contact between infected porcine species, fomites, through ingestion of contaminated feeds or by the soft tick *Ornithodoros* spp. (2). In order to determine the extent of the disease situation in the Caucasus and to enhance the preparedness in the EU, the European Commission requested the European Food Safety Authority (EFSA) to assess the risk that ASFV remains endemic in those neighbouring countries to the EU; the risk that it will become endemic in the EU, if introduced; and to determine the role played by ticks in the spread and the maintenance of ASF.

### Materials and methods

A thorough review of literature and unpublished data was retrieved to provide the essential background information to perform the risk assessment. Due to scarcity of quantitative data, a systematic qualitative risk assessment framework, based on OIE guidelines (3), was chosen to address the Terms of Reference. A generic risk

assessment model was developed outlining 5 risk pathways corresponding to 5 risk questions. These risk pathways consist of consecutive steps that need to happen to lead to endemicity of ASFV in the EU swine population. The resulting tool allows risk managers to follow the conclusions of the risk assessors and to identify where the main risks or uncertainties lie (4). Objectivity and transparency of the risk estimates were achieved through consensus finding of the expert panel (15 experts from various backgrounds) and use of combination matrices to combine risk estimates.

### Results

The literature review and expert opinion revealed that ASF has spread in the TCC and in the RF since 2007 and that the measures put in place have not been sufficient to control the spread (5, 6). Accurate assessment of the incidence and prevalence of ASF in the TCC and RF, however, is difficult due to limited availability of reliable surveillance data. The epidemiological role played by domestic pigs and wild boar is difficult to assess since very little information is available on the geographical distribution and the population size of both free ranging pigs and wild boar. Generally, movement of wild boar is limited geographically, although direct contact between wild boar sounders is frequent due to their social

behaviour (7) and spread of ASFV is possible though connected wild boar populations.

The most likely route of introduction of ASFV into the EU is the illegal movement of food waste. According to the EU legislation, all trade and import to the EU of live pigs and products of pig origin from the TCC and the RF is banned (8). Illegal imports of live pigs and products of pig origin are impossible to quantify due to lack of data. Further, waste food from international means of transport is not always treated according to the EU legislation (9) and there is considerable movement of people (and with them potentially infected pork products) between the Eastern neighbouring countries of the EU and the EU MS which is difficult to control. Among the EU MS, the volume of live pigs and pork traded is substantial and varies by year and region/country. (10).

Bites from infected *Ornithodoros* ticks are efficient routes of transmission of ASFV (11, 12) but their role in the current outbreaks in the TCC and the RF is unknown. Ticks of the *Ornithodoros erraticus* complex can be important in maintaining local foci of ASFV (13, 14) where pigs are kept in traditional husbandry systems (12). These ticks, however, do not play an active role in the geographical spread of the virus. Due to the limited available data on associated factors with the distribution of soft ticks, prediction of their potential distribution is difficult to make.

Based on the risk assessment, the working group concluded that, overall, there is a moderate risk (occurrence of event is a possibility) that ASFV will maintain itself in the TCC and RF swine populations and that it will be introduced in the EU, e.g. by introduction of food waste or by connected wild boar populations.

## Discussion

An integrated strategy involving TCC, the RF and the EU, including an information exchange platform, would facilitate the trans-boundary control of ASF. The reduction of the risk for ASFV endemicity in TCC and RF and spread to other regions can be achieved by supporting enhancement of early warning and preparedness and strengthening rapid and long term control responses.

Also the development of a specific ASF eradication strategy for backyard holdings in TCC, RF and EU was recommended and knowledge and implementation of biosecurity principles, including mechanisms to reduce or prevent contact between domestic pigs and wild boar in TCC, the RF and the EU should be promoted.

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